

Foreign Exchange Intervention Through the Lens of the Quantitative Integrated Policy Framework: The Case of Albania

David Bartolini, Jakree Koosakul, Rebecca Huang, Jesper Linde and
Roland Meeks

SIP/2025/038

IMF Selected Issues Papers are prepared by IMF staff as background documentation for periodic consultations with member countries. It is based on the information available at the time it was completed on December 17, 2024. This paper is also published separately as IMF Country Report No. 25/21.

2025
APR



IMF Selected Issues Paper
European Department

Foreign Exchange Intervention Through the Lens of the Quantitative Integrated Policy Framework: The Case of Albania

Prepared by David Bartolini, Jakree Koosakul, Rebecca Huang, Jesper Linde and Roland Meeks

Authorized for distribution by Anke Weber
April 2025

IMF Selected Issues Papers are prepared by IMF staff as background documentation for periodic consultations with member countries. It is based on the information available at the time it was completed on December 17, 2024. This paper is also published separately as IMF Country Report No 25/21.

ABSTRACT: In recent years, Albania has experienced a sustained appreciation of the domestic currency. This raises the questions of what factors are driving this appreciation and how to calibrate appropriate policy responses. Drawing on insights provided by the IMF's integrated policy framework (IPF), this paper examines the case for foreign exchange intervention (FXI) in Albania by estimating an IPF model to quantitatively illustrate relevant policy tradeoffs. While the estimation results confirm the shallow nature of the local FX markets, the appreciation of the lek is found to have been primarily driven by fundamental factors, making conventional interest rate policy an appropriate policy tool. Nevertheless, in certain circumstances where the fundamental lek appreciation is likely to be compounded by non-fundamental shocks, including shifts in foreign investor risk appetite, FXI can serve as an effective complementary tool in alleviating output-inflation tradeoffs.

RECOMMENDED CITATION: David Bartolini, Jakree Koosakul, Rebecca Huang, Jesper Linde and Roland Meeks. 2025. "Foreign Exchange Intervention Through the Lens of the Quantitative Integrated Policy Framework: The Case of Albania" IMF Selected Issues Paper (SIP/2025/038). Washington, D.C.: International Monetary Fund.

JEL Classification Numbers:	E52, E58, E61, F31, G15
Keywords:	Albania, integrated policy framework, exchange rates, capital flows, tourism, foreign exchange markets, market liquidity, foreign exchange intervention, monetary policy
Author's E-Mail Addresses:	DBartolini@imf.org , JKoosakul@imf.org , RHuang@imf.org , JLinde@imf.org , RMeeks@imf.org

SELECTED ISSUES PAPERS

Foreign Exchange Intervention Through the Lens of the Quantitative Integrated Policy Framework: The Case of Albania

Albania

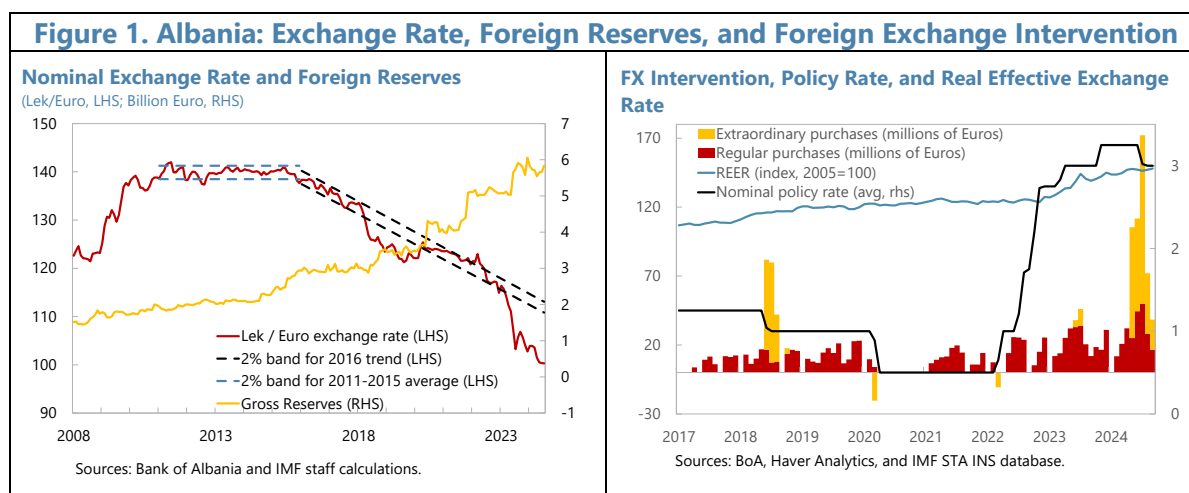
Prepared by David Bartolini, Jakree Koosakul, Rebecca Huang, Jesper Linde and Roland Meeks

FOREIGN EXCHANGE INTERVENTION THROUGH THE LENS OF THE QUANTITATIVE INTEGRATED POLICY FRAMEWORK: THE CASE OF ALBANIA

A. Introduction

1. The IMF's integrated policy framework (IPF) provides a systemic approach to determining an appropriate policy mix in the presence of frictions.¹ The IPF considers three types of frictions (or "use cases") that may warrant the use of foreign exchange intervention (FXI) to complement the policy toolkit: (i) shallow or temporarily illiquid FX markets; (ii) unhedged currency exposures of balance sheets; and (iii) de-anchoring of inflation expectations from high exchange rate pass-through.

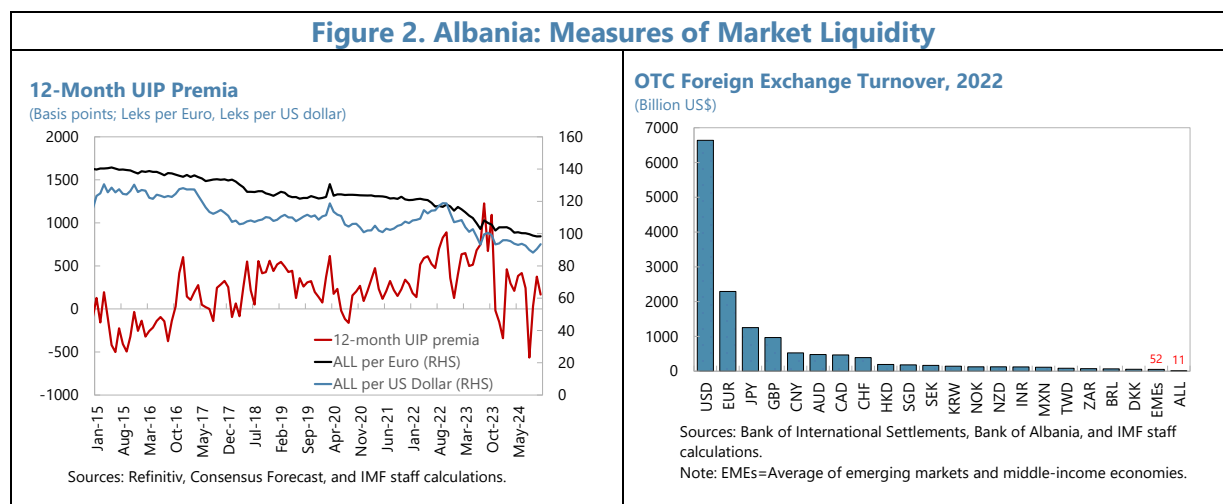
2. The IPF can provide a useful framework for shaping the policy discussion in Albania. Albania is a small open emerging market economy with an inflation targeting regime. Underpinned by the strong macroeconomic performance amid a tourism boom, the Albanian lek has been on a sustained appreciation trend. To stem appreciation pressures, the Bank of Albania (BoA) has intervened forcefully, with the size of FXI during the first 9 months of 2024 amounting to 2.6 percent of 2023 nominal GDP, almost triple the amount of the same period in 2023.



3. Albania's shallow FX markets stand out as the key IPF friction that may create a case for FXI. When markets are shallow, financial intermediaries may have limited capacity to absorb excess currency demand or supply resulting from financial shocks, which can cause significant deviations of the exchange rate away from the fundamental value, with implications for macroeconomic and financial stability. With sizable UIP premia observed during some periods and

¹ The concepts of the IPF are documented in a series of papers with [IMF 2020](#) laying out the key concepts, and [Basu et al. 2020](#), [Adrian et al. 2020](#), [Adrian et al. 2021](#), [Chen et al. 2023](#), [Basu et al. 2023](#) and [Basu and Gopinath 2024](#) providing the main conceptual and quantitative modelling frameworks, while [IMF 2023](#) provides guidance on FXI.

yearly turnover of 11 billion USD, well below the average turnover among emerging market economies of 52 billion USD, Albania's FX markets can be characterized as shallow (as will be confirmed by the quantitative model below). High volatility in UIP premia, especially since Q1 2023, is also an indicator of shallow FX markets. The presence of shallow markets may hence justify the use of FXI to moderate excessive exchange rate movements, although this would depend on the specific nature of the shocks faced by the economy and the associated policy trade-offs (or lack thereof).



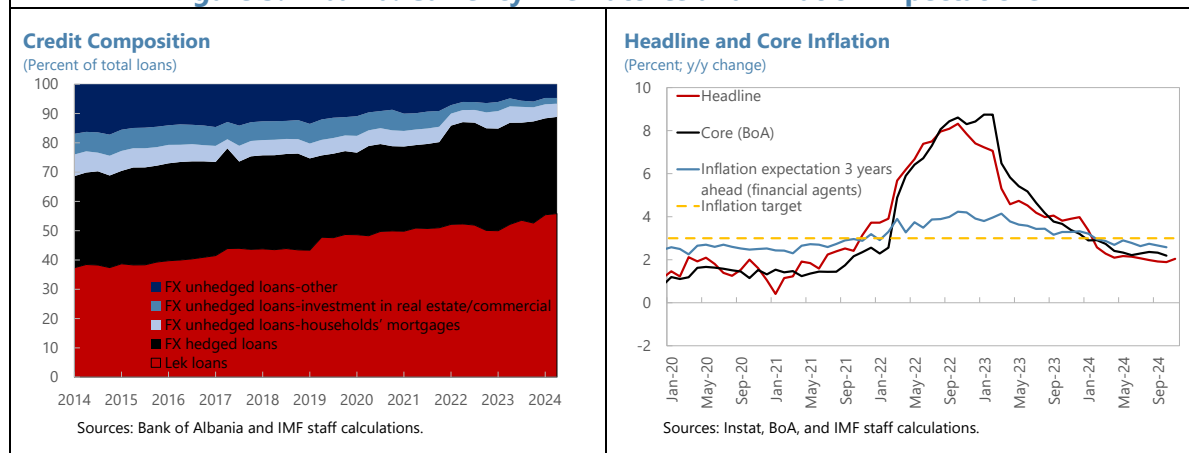
4. Risks related to FX mismatches and de-anchored inflation expectations appear broadly contained and would be better addressed through other policy tools. Broad-based FX mismatches among Albanian firms and households have declined significantly, with the share of unhedged FX loans having declined from 50 percent of total loans in 2014 to 25 percent in 2024. While residual risks remain, notably in the real estate sector (which accounts for two-thirds of unhedged FX loans in 2024), preemptive and targeted measures in the form of MPMs appear to be more appropriate than FXI.² While recent estimates suggest some degree of exchange rate passthrough to inflation in Albania,³ inflation expectations appear well-anchored. In addition, there is room for monetary policy to support a sustainable return of inflation to target without the use of FXI.^{4,5}

² Such measures are discussed in the 2024 Albania Article IV Report.

³ Empirical analysis on exchange rate passthrough to headline CPI, following [Gopinath \(2015\)](#) shows a cumulative impact of about 0.2 percent (for a 1-percent appreciation) over four quarters.

⁴ See the discussion on monetary policy in the 2024 Albania Article IV Report.

⁵ There may, however, be some interaction between exchange rate passthrough to inflation and shallow markets, a feature that is incorporated into our analysis below.

Figure 3. Albania: Currency Mismatches and Inflation Expectations

5. This paper examines the case for FXI in the context of Albania by estimating an IPF model to quantitatively illustrate relevant policy tradeoffs. A version of the quantitative IPF (QIPF) model (Adrian et al., 2021; Chen et al., 2023) is estimated for Albania, with the aim to examine the merits of FXI in response to shocks amid shallow FX markets. Two specific types of shocks are considered, namely (i) a fundamental shock in the form of a tourism boom; and (ii) a non-fundamental shock in the form of exogenous portfolio inflows caused by a risk-on episode.

6. The remainder of the paper proceeds as follows. Section B provides a description of the model, its estimation/calibration, and the specific shocks being considered. Section C discusses the main results under the two shocks as well as from an exercise that attempts to decompose the variation of the exchange rate into fundamental and non-fundamental components. Section D concludes.

B. QIPF Model

The IMF's QIPF—Estimated for Albania

7. The model—key characteristics. The QIPF model is a New Keynesian open economy model tailored to capture key features of advanced and emerging market economies (AEs and EMEs) (see also Adrian et al. 2021). The estimated model for Albania is a linearized version of the QIPF model following Chen et al. (2023), in which the home economy is “small” in the sense of having no impact on the “rest of the world”, represented here by the euro area. The model of Chen et al. is extended to include trend productivity growth and a domestic financial sector. It is assumed that FX intermediaries have limited risk-bearing capacity (as in Gabaix and Maggiori, 2015), which helps to generate realistic levels of exchange rate volatility. This feature also implies that sterilized FX interventions have real effects and creates a rationale for such interventions to counter inefficient fluctuations in the UIP premium.

8. Estimation for Albania—key properties. The model is estimated on a dozen quarterly series for Albania over the period 2009–2024 using Bayesian maximum likelihood. The euro area block is estimated separately, but a suitable set of euro area variables are included in the estimation

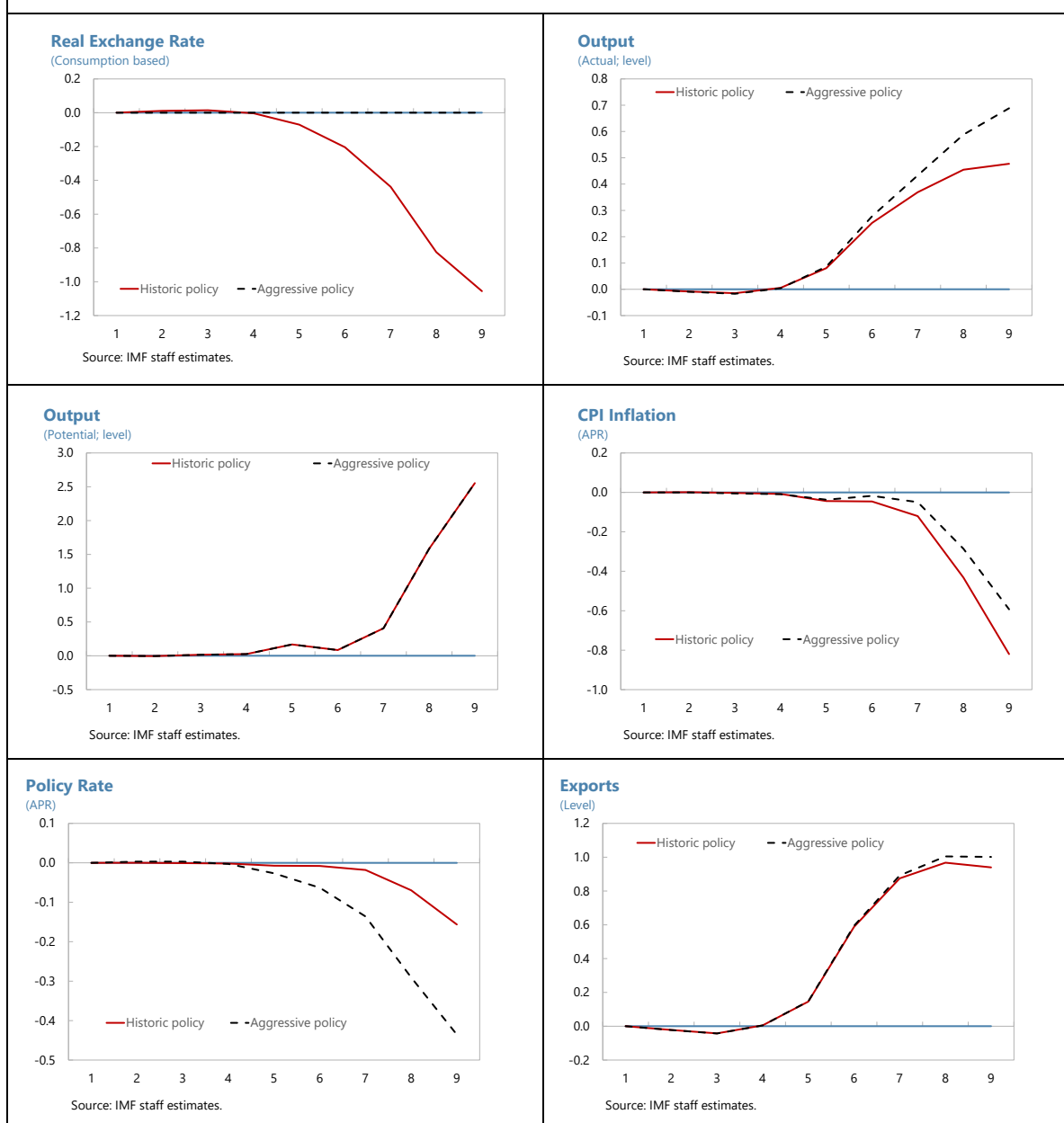
to ensure a proper role for foreign fluctuations. The estimates indicate that pass-through of nominal exchange rate movements to consumer prices is gradual, due to the presence of local currency pricing-to-market behavior. Even so, the estimated model implies that inflation expectations are well-anchored in the medium and long run. Interest rate policy is estimated to gradually adjust to deviations of expected one-year ahead core inflation from target and economic activity (output as deviation from trend), and to transmit effectively to prices and the exchange rate relative to output.

9. The foreign exchange market is estimated to be shallow. Consistent with the preceding analysis in Section A, the preferred specification of the model suggests that the FX market in Albania is often shallow. This implies that FX interventions that either persistently depreciate or appreciate the Albanian Lek can have sizeable macroeconomic effects on core inflation and domestic economic activity, especially if the domestic policy rate is passive and not aggressively changed to offset the exchange rate impact of the FX intervention. Nonetheless, FX interventions are neither warranted nor necessary for fundamental shocks as demonstrated below, but may be useful to lean against temporary non-fundamental capital in- and outflows.

C. Results

Scenario Analysis—A Tourism Boom

10. We consider a stylized scenario where tourism growth is driven by improved fundamentals. Albania has experienced strong growth in its tourism sector along with an appreciation of the real exchange rate. This raises the question of how to calibrate policy instruments in response to such developments. To shed light on this issue, we analyze a stylized scenario intended to capture key aspects of a continued tourism-driven expansion in economic activity with higher net exports, stronger domestic demand, and an appreciation of the real exchange rate. The paths for these variables in the scenario are depicted by the red solid lines in Figure 4. We assume that the key economic drivers of the tourism scenario are movements in ‘fundamentals’ such as productivity (both catch-up trend growth, and temporary moves), the relative price of Albanian exports, and domestic demand shocks, all phased in gradually in the scenario as surprises (so called MIT shocks following the terminology in Boppart, Krusell and Mitman, 2018). This implies that the scenario builds up gradually—and that the central bank is continuously surprised by new shocks—over time. Hence, as in real world policy making, the central bank does not have perfect foresight and gradually learns about the evolution of the economy in the scenario. A significant consideration for the response of policy in the scenario is that the shocks raise potential output more than actual output.

Figure 4. Albania: Tourism Scenario Under Alternative Monetary Policies

11. Monetary policy appears to be a suitable policy tool in the tourism scenario. In our baseline scenario, depicted by the solid red lines in Figure 4, monetary policy is assumed to follow its estimated historical policy rule, which can be thought of as an average over past monetary policy reactions to core CPI inflation and fluctuations in output around trend. Monetary policy eases, because the lek's appreciation puts downward pressure on import prices, and productivity improvements lower domestic unit output costs and put downward pressure on domestic inflation. As prices and wages are sticky and the central bank in the baseline is assumed not to recognize that potential output has increased, actual output does not expand as fast as potential output in the scenario, which causes inflation to fall below target. Accordingly, there is a case for additional

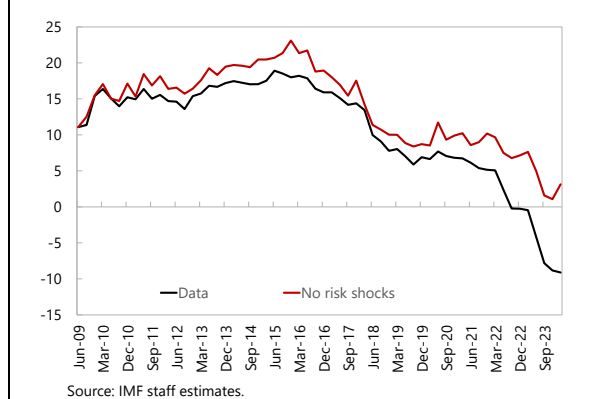
interest rate policy easing that we model as discretionary policy interventions. In this alternative scenario, additional policy rate cuts are for simplicity assumed to offset the appreciation in the lek.⁶ As a result, the output gap narrows and inflation is brought closer to target, while avoiding volatile movements in interest rates. Note that this scenario is intended to be illustrative rather than prescriptive: although FX markets are considered shallow, monetary policy retains significant traction over exchange rates and there is no need to intervene in currency markets. The challenge for the central bank is—in real time—to recognize that potential output has risen and that the strong expansion in economic activity will not induce inflationary pressures down the road.

Risk Shocks

12. Fundamental forces have been the principal driver of the real exchange rate, with sentiment-driven capital flows only a secondary factor.

Our model allows capital flows to be driven by non-fundamental (“risk-on”) shocks, which impact the real exchange rate due to the shallowness of currency markets. Estimates for Albania indicate that while fundamental shocks have been the primary driver of real exchange rate movements, such non-fundamental shocks have, on average over the period under study, contributed only modestly to variability in the lek/euro real exchange rate (5 percent in a long-run variance decomposition sense if FXI is reacting to exchange rate movements, and around 15 percent assuming no FX interventions are used to lean against exchange rate movements). Over shorter horizons, though, the effect of risk shocks on the exchange rate can be more material. In the figure above we show data on the consumption-based RER in terms of deviation from its long-run average alongside a counterfactual simulation in which there were no disturbances to non-fundamental capital flows. The difference between the two lines can be read as the cumulative contribution of risk shocks to the RER, and since 2021 it appears that such shocks appreciated the lek by around 11 percent. The precise numbers are subject to uncertainty arising both from estimation (given the relatively short sample to hand), and model specification.

Figure 5. Albania: Real Exchange Rate and Counterfactual
(Consumption based)



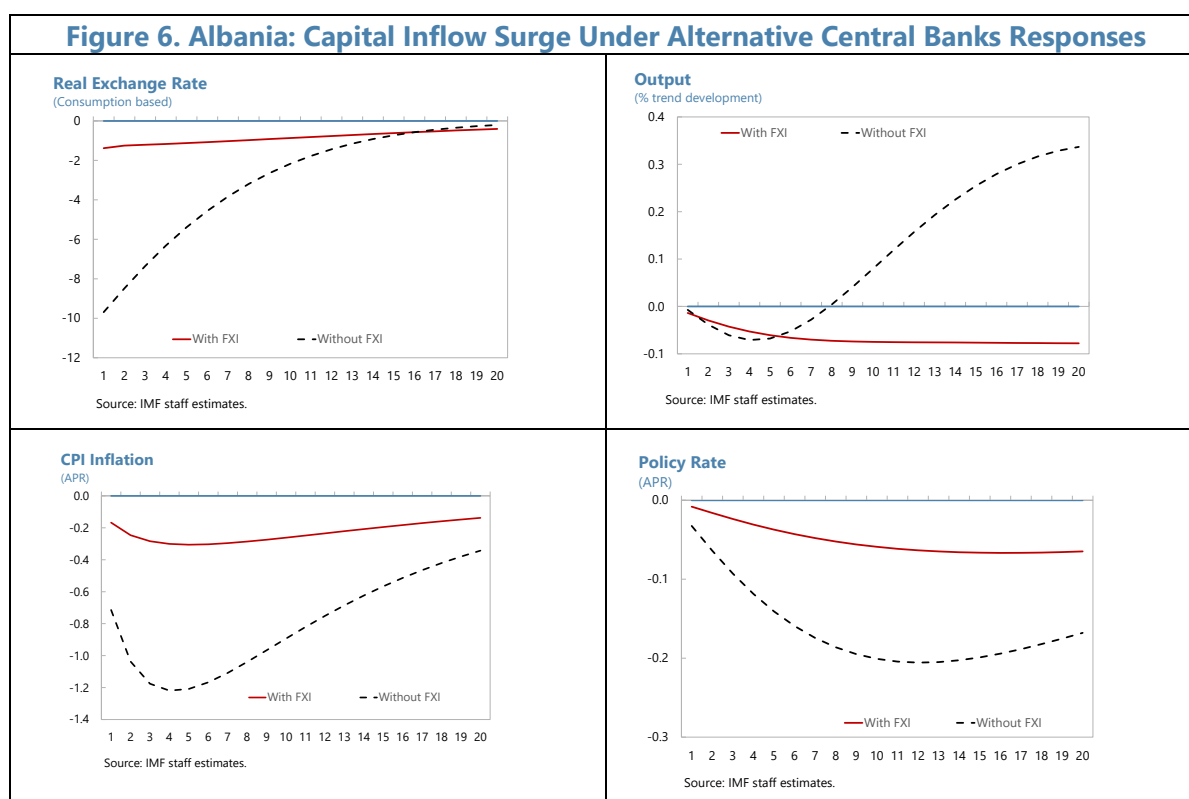
13. Exchange rate volatility driven by non-fundamental factors may present policymakers with a trade-off between stabilization objectives.

Risk-on or off shocks may be of concern to policymakers, especially if disturbances have persistent effects on capital flows, because they lead to

⁶ Offsetting the real exchange rate appreciation with additional interest rate cuts is not necessarily an optimal interest rate policy in the scenario, but it gives an assessment of how interest rate policy that does not allow for RER appreciation can improve outcomes. For example, measured by a standard central bank objective function that is quadratic in the output gap and inflation, the alternative policy delivers a 25 percent improvement over the historical policy response. Since the output gap remains negative and inflation remains below target one would consider an even more stimulative policy rate path.

fluctuations in the UIP “wedge”, which is an indicator of the extent of frictions in international financial markets. Moreover, such risk shocks may induce a trade-off between output and inflation in Albania according to the estimated model. Such a trade-off is illustrated in the black dashed line in Figure 6, wherein a non-fundamental capital inflow shock that appreciates the exchange rate puts downward pressure on inflation while also producing a persistent subsequent rise in output. Since interest rate policy transmits principally through aggregate demand, it is only able to move inflation and output in the same direction, and consequently is not ideally suited to addressing the capital flow shock in these circumstances.

14. Adverse impacts from risk shocks can be addressed using FXI. A better tool to address temporary inefficient capital flow shocks is a sterilized FX intervention, provided that markets are sufficiently shallow and an appropriate buffer of reserves is available. The red solid line in Figure 6 shows the response to such shocks when the central bank intervenes and leans against the appreciation. FX interventions are modeled as an endogenous reaction to the change in the nominal exchange rate, combined with some gradual mean-reversion to restore the desired ratio of reserves to GDP. As the inflow shock causes the euro to become temporarily cheap, the FX rule calls for euro purchases, with the effect that the lek exchange rate appreciation is greatly reduced. Moreover, the aforementioned output-inflation trade-off is eliminated, suggesting that an easing of interest rate policy coordinated with FXI could realize even greater stabilization benefits. An important sensitivity in this analysis is the strength with which FX policy responds to the exchange rate. A range of estimates can be obtained using the QIPF model, depending to a large degree on which historical intervention data are used. Amongst the alternatives considered, FXI is always an effective tool for addressing risk shocks, even though quantitative differences in the responses may be observed.



D. Conclusion and Policy Considerations

15. The exchange rate should continue to play its role as a shock absorber with FXI reserved to moderate the impact of non-fundamental shocks. The application of the quantitative IPF model to Albania shows that the appreciation of the lek has historically been driven largely by fundamentals, with non-fundamental factors playing a modest role in some episodes. As such, consideration should be given to letting the exchange rate adjust more flexibly and relying on interest rate policy as the primary tool for price stability. In cases of non-fundamental shocks, the scenario analysis suggests that interventions could be beneficial by lowering output and inflation volatility. In doing so, however, the authorities should internalize the potential adverse consequences of FXI (and further reserve accumulation), including on risks to the central bank balance sheet, interest rate transmission, and financial market development.

References

- Adler, G., K.S. Chang, R. Mano, and Y. Shao, 2021, "Foreign Exchange Intervention: A Dataset of Public Data and Proxies," IMF Working Paper No. 21/47, International Monetary Fund, Washington DC.
- Adrian, T., C. Erceg, J. Linde, P. Zabczyk, and J. Zhou, 2020, "A Quantitative Model for the Integrated Policy Framework," IMF Working Paper No. 20/122, International Monetary Fund, Washington DC.
- Adrian, T., C. Erceg, M. Kolasa, J. Linde, and P. Zabczyk, 2021, "A Quantitative Microfounded Model for the Integrated Policy Framework," IMF Working Paper No. 21/292, International Monetary Fund, Washington DC.
- Basu, S., E. Boz, G. Gopinath, F. Roch, and F. D. Unsal, 2020, "A Conceptual Model for the Integrated Policy Framework," IMF Working Paper No. 20/121, International Monetary Fund, Washington DC.
- Basu, S., E. Boz, G. Gopinath, F. Roch, and F. Unsal, 2023, "Integrated Monetary and Financial Policies for Small Open Economies," IMF Working Paper No. 2023/161, International Monetary Fund, Washington DC.
- Basu, S., and G. Gopinath, 2024, "An Integrated Policy Framework (IPF) Diagram for International Economics," IMF Working Paper No. 2024/038, International Monetary Fund, Washington DC.
- Boppart, T., P. Krusell, K. Mitman, 2018, "Exploiting MIT Shocks in Heterogeneous Agent Economies: The Impulse Response as a Numerical Derivative", *Journal of Economic Dynamics and Control*, 89, 68-92.
- Chen, K., M. Kolasa, J. Linde, H. Wang, P. Zabczyk, and J. Zhou, 2023, "An Estimated DSGE Model for Integrated Policy Analysis," IMF Working Paper No. 23/135, International Monetary Fund, Washington DC.
- Gabaix, X and M. Maggiori, 2015, "International Liquidity and Exchange Rate Dynamics", *Quarterly Journal of Economics*, 130, 1369-1420.
- IMF, 2020, "Toward and Integrated Policy Framework," IMF Policy Paper No. 2020/046, International Monetary Fund, Washington DC.
- IMF, 2023, "Integrated Policy Framework – Principles for the Use of Foreign Exchange Intervention," IMF Policy Paper No. 2023/061, International Monetary Fund, Washington DC.